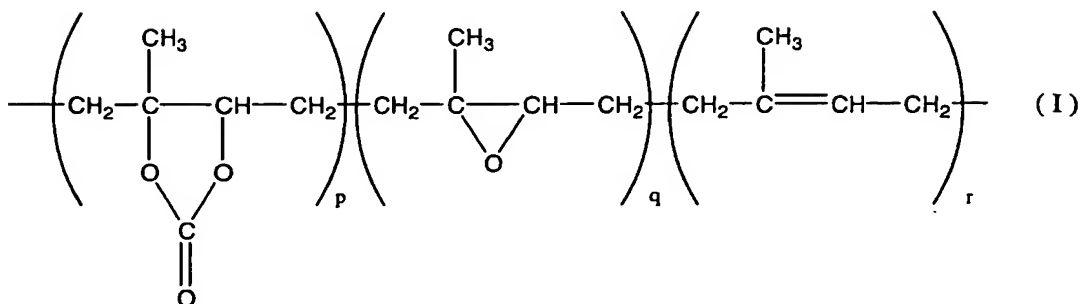


Claims

1. A cyclic carbonate-containing polymeric compound represented by formula (I):



wherein p, q, and r independently represent the molar composition ratio of each monomer unit: p is a number over 0; q and r are each a number not smaller than 0; and the sum of p, q, and r is 1 or smaller.

2. A method for producing the cyclic carbonate-containing polymeric compound according to claim 1 comprising a first step of epoxidizing natural rubber and a second step of allowing the epoxidized natural rubber obtained via the first step to react with supercritical carbon dioxide.

3. The method according to claim 2, wherein the second step is carried out in the presence of a polar organic solvent and/or an ionic liquid.

4. The method according to claim 3, wherein the polar organic solvent is at least one member selected from the group consisting of N,N-dimethylformamide, N,N-diethylformamide, N,N-dimethylacetamide, N,N-diethylacetamide, and N-methylpyrrolidone.

5. The method according to claim 3, wherein the ionic liquid is at least one member selected from the group consisting of 3-methyl-1-octylimidazolium tetrafluoroborate, 1-hexyl-3-methylimidazolium tetrafluoroborate, 1-butyl-3-methylimidazolium tetrafluoroborate, 1-ethyl-3-methylimidazolium tetrafluoroborate, 1-ethyl-3-methylimidazolium hexafluorophosphate, and 1-ethyl-3-methylimidazolium trifluoromethanesulfate.

6. The method according to claim 2, wherein the second step is carried out at a reaction temperature between 50°C and 200°C.

7. The method according to claim 2, wherein the second step is carried out at a supercritical carbon dioxide pressure of between 5 MPa and 20 MPa.

8. The method according to claim 2, wherein the second step is carried out for 0.5 hour to 20 hours.